

Some example Spatially-Associated: Health Effects

Endicott, NY - **TCE** plume (70 block) area:

- Statistically elevated rates of TCE-assoc.:
- **Cancers** (e.g., Kidney; ATSDR, 2006)
- **Non-cancer effects** - (IA = 0.18 - 140 ug/m³)
 - 1090 births 1978-2002 (~2615 residents)

+ 23% Small for gestational age*	117
+ 36% Low birth weight**	76
+ 68% Term low birth weight	37
+ 215% Cardiac defects***	15
+ 240% Major cardiac defects	6
+ 491% Conotruncal ¹ defects	3

Weeks of Pregnancy & Fetal Heart Development

Week 3 15-21 days from fertilization

"Primitive **heart tube** is forming"

Week 4 22-28 days from fertilization

"The heart bulges, further develops, and **begins to beat** in a regular rhythm."

Similar findings for: *SGA in NC, MA; ** LBW in NJ, AZ; ***CD in NJ, AZ, WI

¹ "abnormal formation of the outflow tracts of the heart"

(RR%) Rate Ratios in percent relative to the rest of NY state (excluding NYC)

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"Conclusions: Maternal residence in **both areas** was associated with **cardiac defects**. Residence in the **TCE area**, but *not the PCE area*, was associated with **low birth weight** and **fetal growth restriction**."

Maternal Exposure to Tetrachloroethylene and Trichloroethylene through Soil Vapor Intrusion and Adverse Birth Outcomes in New York State

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<http://dx.doi.org/10.1289/ehp.1103884>

~95% of
problem
Identified
&
controlled
w/n 6 - 12
months



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